AD-A088 346 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
12824C LANCE, MISSILE NUMBER 5194, ROUND NUMBER 353 NPL, 4 JULY--ETC(U)
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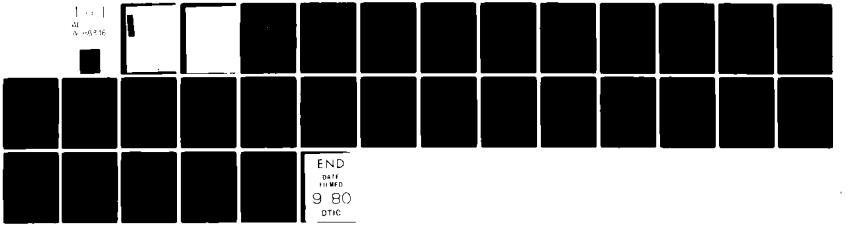

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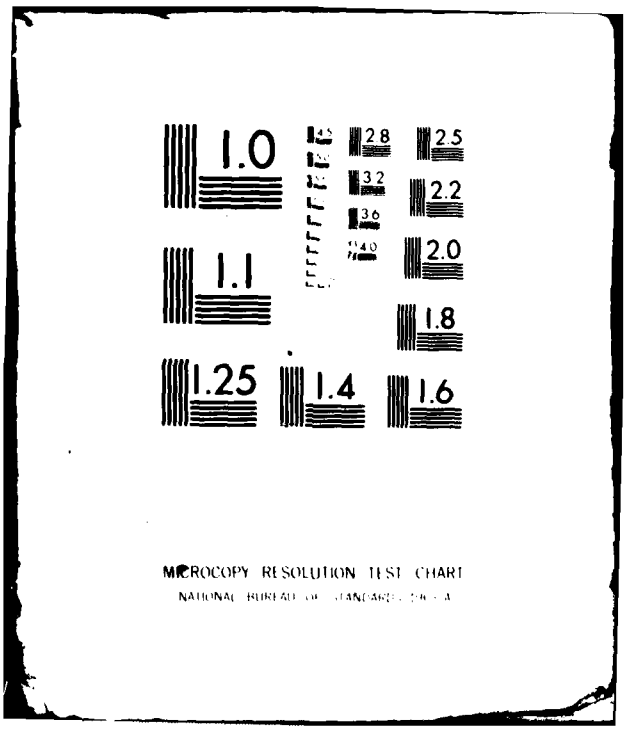
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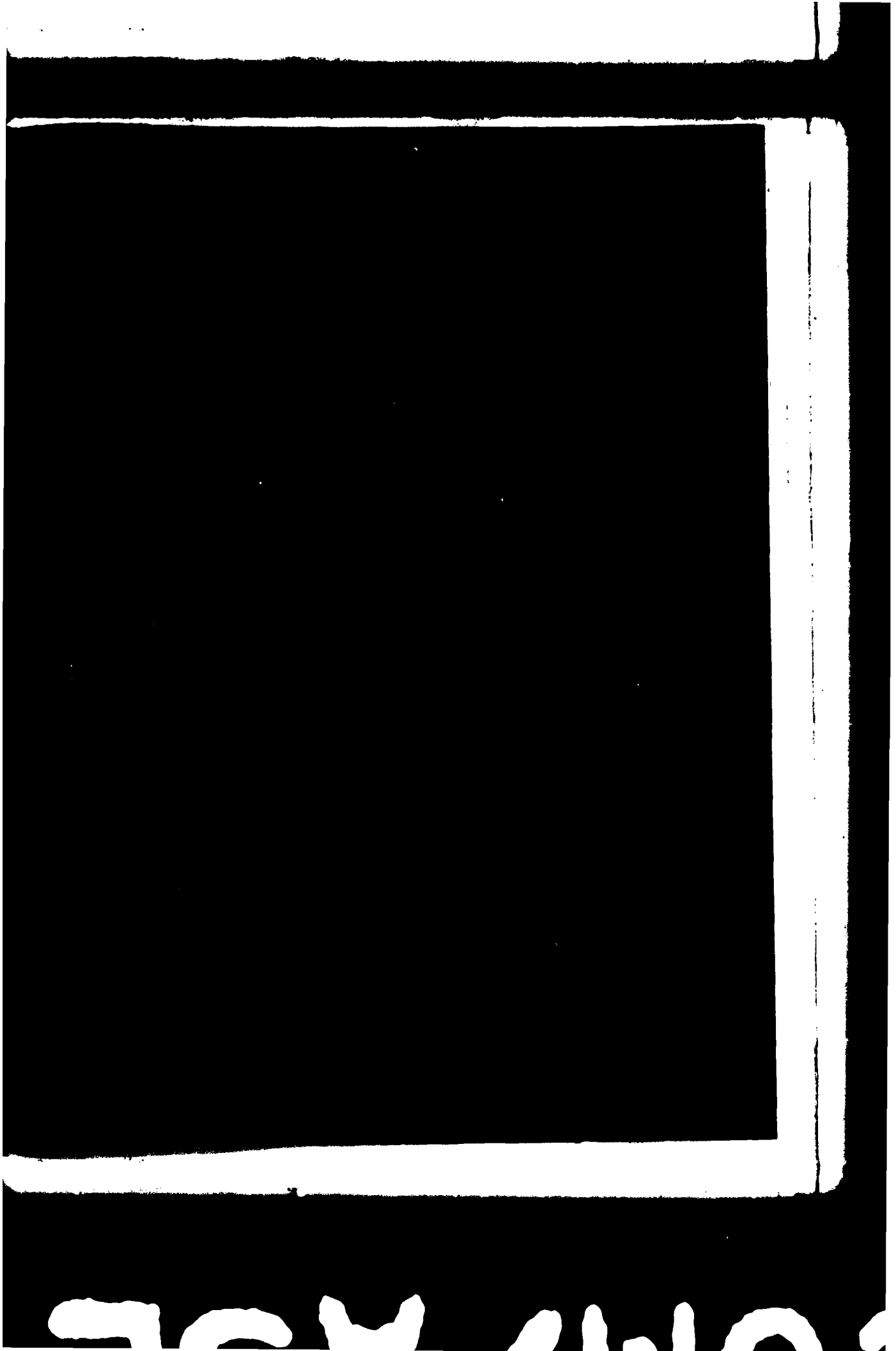
NATIONAL BUREAU OF STANDARDS



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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Meteorological data gathered for the launching of the 12824C LANCE, Missile Number 5194, Round Number 353 NPL, presented in tabular form.

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

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CONTENTS

INTRODUCTION

12824C LANCE, Missile Number 5194, Round Number 353 ECL, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1500 MDT on 4 July 1980. The scheduled launch time was 1500 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

   a. Surface

   (1) Standard surface observations to include pressure, temperature (^{o}C), relative humidity, dew point (^{o}C), density (gm/m^3), Wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

   (2) Monitor of wind speed and direction from one anemometer was provided in the launch control room.

   b. Upper Air

   (1) Low level wind data were obtained from RAPTS T-9 pibal observation at:

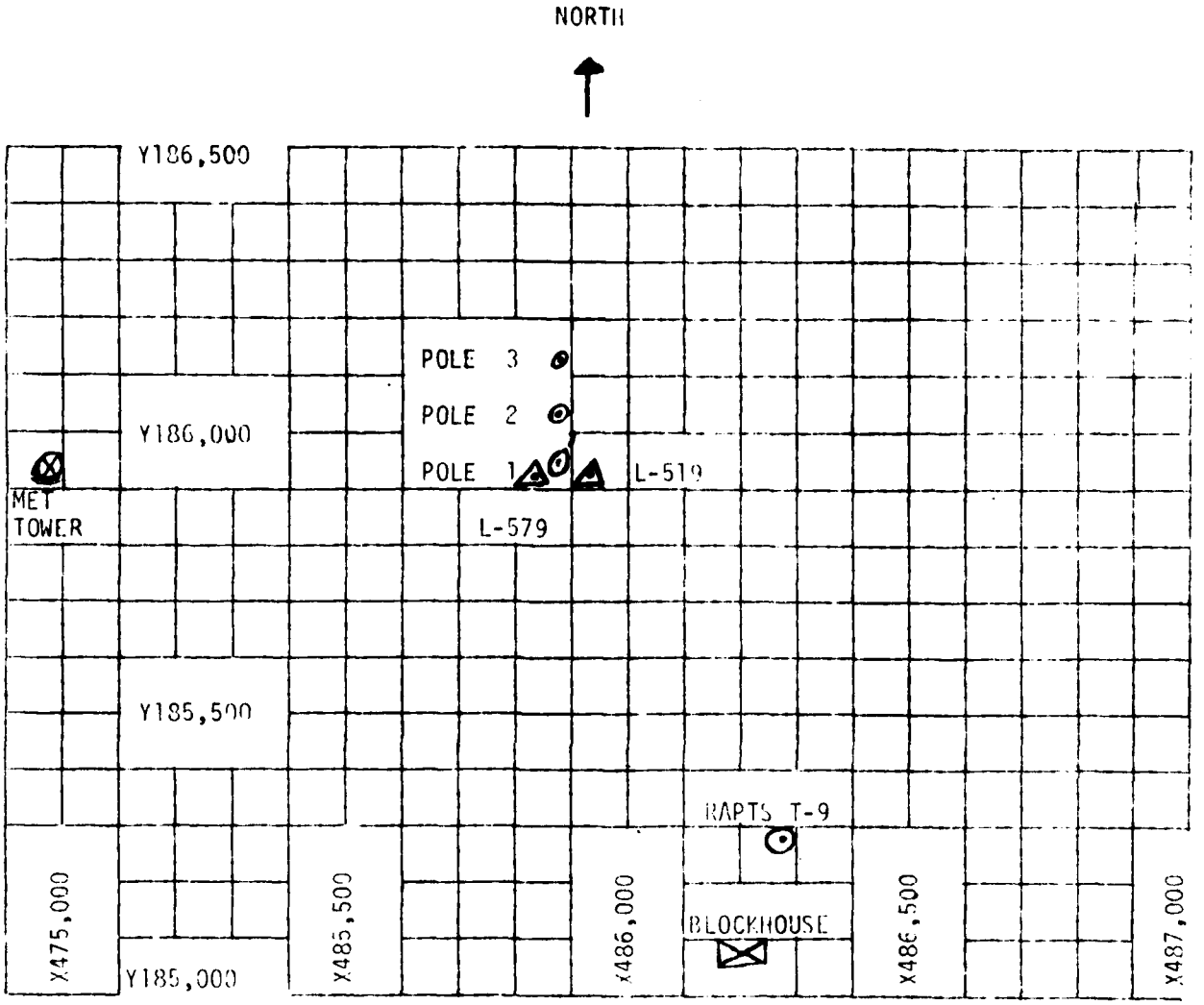
SITE AND ALTITUDE

NOT AVAILABLE

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to **as high as possible** in 500-feet increments.

SITE AND TIME

WSD	**1500 MDT**
SMR	**1400 MDT**
HMN	**1500 MDT**



1. MET TOWER - 4 Bendix Model T-20 Anemometers at 12 ft, 62 ft, 102 ft, and 202 ft with E/A recorders.

2. POLE ANEMOMETER - Bendix Model T-120 with E/A recorders.

   (a) Pole #1 - 38.7 ft.

   (b) Pole #2 - 53.0 ft.

   (c) Pole #3 - 83.6 ft.

3. RAPTS T-9 Radar Automatic Pilot-Balloon Tracking System T-9 Radar.

TABLE 1. **Surface Observations Taken at 1500 MDT, 4 July 1980, at LC-33, 12824C LANCE, Missile Number 5194, Round Number 353 NPL.**

ELEVATION	3987	FT/MSL
PRESSURE	877.5	MBS
TEMPERATURE	34.7	^{o}C
RELATIVE HUMIDITY	26	%
DEW POINT	12.2	^{o}C
DENSITY	984	GM/M^3
WIND SPEED	04	KTS
WIND DIRECTION	090	DEGREES
CLOUD COVER	4 4	CB CI

STATION ALTITUDE 3989.00 FEET MSL
4 JULY 80 1500 HRS MDT
ASCENSION NO. 559

SIGNIFICANT LEVEL DATA
186002059
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 2.

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
877.5	3989.0	37.5	9.2	18.0
850.0	4938.7	33.7	4.4	16.0
781.6	7392.6	26.0	.6	19.0
700.0	10530.6	17.4	-1.3	28.0
631.6	13376.2	9.6	-3.0	41.0
558.8	16665.5	.5	-6.6	58.0
500.0	19567.9	-5.9	-12.0	62.0
471.1	21092.8	-9.6	-13.7	72.0
458.4	21786.6	-10.5	-18.0	54.0
434.6	23128.7	-13.7	-34.0	16.0
426.6	23593.0	-14.0	-34.9	15.0
400.0	25189.9	-17.7	-38.0	15.0
374.6	26794.1	-21.3	-40.3	16.0
307.0	31515.9	-32.9	-49.5	17.0
300.0	32049.5	-33.6		
250.0	36185.0	-42.3		
224.8	38524.0	-47.9		
200.0	41051.7	-50.3		
150.0	47055.7	-63.7		
100.0	55151.3	-69.3		
75.8	60640.2	-67.2		
70.0	62241.5	-63.1		
56.0	66935.4	-57.6		
50.0	69197.8	-57.9		
38.6	74637.8	-54.1		

STATION ALTITUDE 3989.00 FEET MSL
4 JULY 80 1500 HRS MDT
ASCENSION NO. 359

UPPER AIR DATA
1060020359
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 3.

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	877.5	37.5	9.2	18.0	979.1	688.4	.0	.0	1.000264
4000.0	877.2	37.5	9.1	18.0	978.9	688.3	182.0	.0	1.000264
4500.0	862.6	35.5	6.6	16.9	969.6	685.8	182.0	1.0	1.000255
5000.0	848.2	33.5	4.3	16.1	960.0	683.5	182.0	2.0	1.000247
5500.0	833.8	31.9	3.6	16.7	948.7	681.7	182.0	3.0	1.000244
6000.0	819.7	30.4	2.8	17.3	937.6	679.9	182.0	4.0	1.000240
6500.0	805.8	28.8	2.1	17.9	926.6	678.1	181.1	4.6	1.000236
7000.0	792.2	27.2	1.3	18.5	915.8	676.3	178.4	4.4	1.000232
7500.0	778.7	25.7	.6	19.3	904.8	674.5	175.0	4.3	1.000229
8000.0	765.1	24.3	.5	20.7	893.2	673.0	166.1	5.4	1.000226
8500.0	751.8	23.0	.2	22.2	881.7	671.4	160.3	6.5	1.000223
9000.0	738.7	21.6	-.0	23.6	870.3	669.9	147.1	6.9	1.000221
9500.0	725.8	20.2	-.4	25.0	859.2	668.3	132.4	7.4	1.000218
10000.0	713.2	18.9	-.8	26.5	848.2	666.7	115.2	7.2	1.000215
10500.0	700.8	17.5	-1.2	27.9	837.4	665.2	95.1	7.4	1.000212
11000.0	688.2	16.1	-1.4	30.1	826.3	663.6	87.9	6.9	1.000209
11500.0	675.9	14.7	-1.6	32.4	815.4	662.0	84.6	5.9	1.000207
12000.0	663.8	13.4	-1.9	34.7	804.6	660.4	81.2	5.4	1.000204
12500.0	651.9	12.0	-2.2	37.0	794.0	658.9	77.2	4.9	1.000201
13000.0	640.2	10.6	-2.6	39.3	783.6	657.3	86.6	5.1	1.000198
13500.0	628.7	9.3	-3.1	41.6	773.3	655.6	95.3	5.4	1.000195
14000.0	617.1	7.9	-3.5	44.2	762.8	654.0	107.8	5.2	1.000193
14500.0	605.7	6.5	-4.0	46.8	752.4	652.4	121.0	5.2	1.000190
15000.0	594.5	5.1	-4.6	49.4	742.3	650.8	127.5	5.2	1.000187
15500.0	583.6	3.7	-5.2	52.0	732.3	649.1	131.2	5.1	1.000184
16000.0	572.8	2.3	-5.9	54.6	722.5	647.5	131.3	5.1	1.000181
16500.0	562.3	1.0	-6.5	57.1	712.8	645.8	128.4	5.2	1.000178
17000.0	551.7	-.2	-7.4	58.5	702.5	644.4	128.1	5.2	1.000174
17500.0	541.2	-1.3	-8.3	59.2	692.1	643.0	130.3	5.3	1.000171
18000.0	531.0	-2.4	-9.2	59.8	681.8	641.7	129.5	5.6	1.000168
18500.0	520.9	-3.5	-10.1	60.5	671.7	640.3	127.4	6.1	1.000164
19000.0	511.0	-4.6	-11.0	61.2	661.7	639.0	123.0	6.0	1.000161

STATION ALTITUDE 3980.00 FEET MSL
4 JULY 89 1400 HRS MDT
ASCENSION NO. 359

UPPER AIR DATA
186002359
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 3 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
19500.0	501.3	-5.8	-11.9	61.9	651.9	637.6	118.0	5.0	1.000158
20000.0	491.6	-6.9	-12.4	64.8	642.2	636.2	115.9	4.9	1.000156
20500.0	482.1	-8.2	-13.0	68.1	632.7	634.7	113.0	4.0	1.000153
21000.0	472.8	-9.4	-13.6	71.4	623.4	633.3	125.2	3.4	1.000151
21500.0	463.6	-10.1	-16.1	61.4	613.2	632.3	142.1	3.1	1.000146
22000.0	454.5	-11.0	-19.8	48.0	603.4	631.1	149.5	3.7	1.000141
22500.0	445.6	-12.2	-24.9	33.8	594.5	629.5	145.7	4.1	1.000137
23000.0	436.8	-13.4	-31.7	19.6	585.6	628.0	112.3	4.6	1.000133
23500.0	428.2	-13.9	-34.7	15.2	575.3	627.3	94.6	5.4	1.000130
24000.0	419.7	-14.9	-35.7	15.0	566.0	626.1	85.5	5.8	1.000128
24500.0	411.3	-16.1	-36.6	15.0	557.3	624.7	82.1	5.6	1.000126
25000.0	403.1	-17.3	-37.6	15.0	548.6	623.3	80.9	4.9	1.000124
25500.0	395.0	-18.4	-38.4	15.2	540.0	621.9	73.0	4.9	1.000122
26000.0	387.0	-19.5	-39.1	15.5	531.4	620.5	63.9	5.3	1.000120
26500.0	379.1	-20.6	-39.9	15.8	523.0	619.1	56.1	5.5	1.000118
27000.0	371.4	-21.8	-40.7	16.0	514.6	617.7	49.2	5.8	1.000116
27500.0	363.6	-23.0	-41.7	16.1	506.4	616.2	43.5	6.2	1.000114
28000.0	356.0	-24.3	-42.6	16.3	498.3	614.7	38.6	6.7	1.000112
28500.0	348.6	-25.5	-43.6	16.4	490.3	613.1	37.5	7.1	1.000110
29000.0	341.3	-26.7	-44.6	16.5	482.5	611.6	37.0	7.6	1.000108
29500.0	334.2	-27.9	-45.6	16.6	474.8	610.1	35.7	8.2	1.000106
30000.0	327.3	-29.2	-46.5	16.7	467.2	608.5	34.4	8.9	1.000105
30500.0	320.4	-30.4	-47.5	16.8	459.8	607.0	31.2	9.0	1.000103
31000.0	313.7	-31.6	-48.5	16.9	452.5	605.5	27.0	8.8	1.000101
31500.0	307.2	-32.9	-49.5	17.0	445.3	603.9	26.4	8.5	1.000100
32000.0	300.6	-33.5	-68.4	1.6**	437.1	603.0	27.7	8.0	1.000097
32500.0	294.1	-34.5			429.4	601.8	31.0	8.0	1.000096
33000.0	287.7	-35.6			421.9	600.4	34.7	8.3	1.000094
33500.0	281.4	-36.7			414.5	599.1	40.5	9.0	1.000092
34000.0	275.3	-37.7			407.3	597.8	45.9	9.7	1.000091
34500.0	269.3	-38.8			400.2	596.4	50.6	12.2	1.000089
35000.0	263.4	-39.8			393.3	595.1	53.6	14.7	1.000088

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.00 FEET MSL
4 JULY 89 1400 HRS MDT
ASCENSION NO. 359

UPPER AIR DATA
186020359
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 3 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
35500.0	257.7	-40.9			386.4	593.8	55.0	15.4	1.000086
36000.0	252.1	-41.9			379.7	592.4	56.3	16.2	1.000085
36500.0	246.5	-43.1			373.1	591.0	61.2	15.8	1.000083
37000.0	240.9	-44.2			366.7	589.4	66.3	15.6	1.000082
37500.0	235.5	-45.4			360.3	587.9	68.9	16.4	1.000080
38000.0	230.2	-46.6			354.1	586.3	71.0	17.3	1.000079
38500.0	225.0	-47.8			348.0	584.8	68.3	18.9	1.000078
39000.0	219.9	-48.4			340.8	584.1	64.9	20.7	1.000076
39500.0	214.9	-48.8			333.7	583.5	60.3	22.7	1.000074
40000.0	210.0	-49.3			326.8	582.9	55.7	25.0	1.000073
40500.0	205.2	-49.8			320.0	582.3	53.6	26.7	1.000071
41000.0	200.5	-50.3			313.3	581.6	52.8	28.0	1.000070
41500.0	195.7	-51.3			307.4	580.3	54.1	29.5	1.000068
42000.0	191.1	-52.4			301.6	578.8	56.2	31.3	1.000067
42500.0	186.6	-53.5			296.0	577.3	55.4	32.7	1.000066
43000.0	182.2	-54.6			290.4	575.9	53.9	34.1	1.000065
43500.0	177.9	-55.8			285.0	574.4	53.8	34.4	1.000063
44000.0	173.7	-56.9			279.7	572.9	53.8	34.6	1.000062
44500.0	169.5	-58.0			274.5	571.4	57.5	34.7	1.000061
45000.0	165.5	-59.1			269.4	570.0	61.4	35.0	1.000060
45500.0	161.6	-60.2			264.4	568.5	65.4	35.1	1.000059
46000.0	157.8	-61.3			259.5	567.0	69.4	35.4	1.000058
46500.0	154.0	-62.5			254.7	565.5	71.8	35.1	1.000057
47000.0	150.4	-63.6			250.0	564.0	74.1	34.8	1.000056
47500.0	146.7	-64.0			244.4	563.4	76.8	33.8	1.000054
48000.0	143.1	-64.4			238.7	562.9	79.8	32.4	1.000053
48500.0	139.5	-64.7			233.2	562.5	83.6	30.9	1.000052
49000.0	136.1	-65.0			227.8	562.0	89.2	29.0	1.000051
49500.0	132.7	-65.4			222.5	561.5	95.2	27.2	1.000050
50000.0	129.4	-65.7			217.4	561.1	100.2	23.9	1.000048
50500.0	126.2	-66.1			212.4	560.6	106.2	20.9	1.000047
51000.0	123.1	-66.4			207.5	560.1	108.8	18.5	1.000046

STATION ALTITUDE 5989.00 FEET MSL
4 JULY 89 1400 HRS MDT
ASCENSION NO. 359

UPPER AIR DATA
18600203S9
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 3 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
51500.0	120.1	-66.8			202.7	559.7	112.0	16.2	1.000045
52000.0	117.1	-67.1			198.0	559.2	110.4	17.1	1.000044
52500.0	114.2	-67.5			193.4	558.7	108.9	18.0	1.000043
53000.0	111.4	-67.8			189.0	558.3	109.9	17.9	1.000042
53500.0	108.6	-68.2			184.6	557.8	111.6	17.4	1.000041
54000.0	105.9	-68.5			180.3	557.3	113.8	17.1	1.000040
54500.0	103.3	-68.8			176.2	556.8	116.5	17.0	1.000039
55000.0	100.8	-69.2			172.1	556.4	120.3	17.2	1.000038
55500.0	98.3	-69.2			167.8	556.4	126.7	18.1	1.000037
56000.0	95.8	-69.0			163.5	556.7	132.3	19.3	1.000036
56500.0	93.4	-68.8			159.2	556.9	137.2	17.4	1.000035
57000.0	91.1	-68.6			155.1	557.2	143.2	15.7	1.000035
57500.0	88.8	-68.4			151.1	557.5	141.3	14.0	1.000034
58000.0	86.6	-68.2			147.2	557.7	135.4	12.4	1.000033
58500.0	84.4	-68.0			143.4	558.0	129.5	12.0	1.000032
59000.0	82.3	-67.8			139.7	558.2	125.4	12.9	1.000031
59500.0	80.3	-67.6			136.1	558.5	122.1	13.8	1.000030
60000.0	78.3	-67.4			132.6	558.8	120.5	14.2	1.000030
60500.0	76.3	-67.3			129.2	559.0	119.1	14.5	1.000029
61000.0	74.5	-66.3			125.4	560.3	116.5	14.8	1.000028
61500.0	72.6	-65.0			121.6	562.1	113.7	15.0	1.000027
62000.0	70.8	-63.7			117.8	563.8	111.1	15.3	1.000026
62500.0	69.1	-62.8			114.5	565.0	109.0	15.9	1.000025
63000.0	67.5	-62.2			111.4	565.8	107.1	16.4	1.000025
63500.0	65.8	-61.6			108.4	566.6	104.2	16.9	1.000024
64000.0	64.3	-61.0			105.5	567.4	101.4	17.4	1.000023
64500.0	62.7	-60.4			102.7	568.2	94.8	18.6	1.000023
65000.0	61.2	-59.8			100.0	569.0	85.2	21.2	1.000022
65500.0	59.8	-59.2			97.3	569.8	77.7	24.3	1.000022
66000.0	58.3	-58.6			94.7	570.6	77.0	26.4	1.000021
66500.0	56.9	-58.0			92.2	571.4	77.0	28.4	1.000021
67000.0	55.6	-57.6			89.8	571.9	77.9	29.7	1.000020

STATION ALTITUDE 5989.00 FEET MSL
4 JULY 80 1400 HRS MDT
ASCENSION NO. 359

UPPER AIR DATA
1860020359
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 3 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
67500.0	54.2	-57.7			87.7	571.9	83.2	28.4	1.000020
68000.0	53.0	-57.7			85.6	571.8	89.0	27.4	1.000019
68500.0	51.7	-57.8			83.6	571.7	93.2	26.6	1.000019
69000.0	50.5	-57.9			81.7	571.6	94.8	25.8	1.000018
69500.0	49.3	-57.7			79.7	571.8	96.6	25.0	1.000018
70000.0	48.1	-57.5			77.7	572.3	97.3	25.7	1.000017
70500.0	47.0	-57.0			75.7	572.8	97.4	27.2	1.000017
71000.0	45.9	-56.6			73.8	573.2	97.5	28.8	1.000016
71500.0	44.8	-56.3			72.0	573.7	99.0	29.1	1.000016
72000.0	43.8	-55.9			70.2	574.2	100.8	29.2	1.000016
72500.0	42.7	-55.6			68.4	574.6	102.7	29.3	1.000015
73000.0	41.7	-55.2			66.7	575.1			1.000015
73500.0	40.7	-54.9			65.0	575.5			1.000014
74000.0	39.8	-54.5			63.4	576.0			1.000014
74500.0	38.9	-54.2			61.8	576.5			1.000014

STATION ALTITUDE 3987.00 FEET MSL
4 JULY 80
ASCENSION NO. 359

1400 HRS MDT

MANDATORY LEVELS
1860020359
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 4.

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	4935.	33.7	4.4	16.	182.0	1.9
800.0	6713.	28.1	1.7	18.	180.0	4.5
750.0	8570.	22.0	.2	22.	159.6	6.7
700.0	10520.	17.4	-1.3	28.	94.1	7.4
650.0	12575.	11.8	-2.3	37.	78.8	5.0
600.0	14750.	5.8	-4.3	48.	125.8	5.3
550.0	17062.	-.8	-7.5	59.	128.4	5.2
500.0	19540.	-5.9	-12.0	62.	117.7	5.8
450.0	22219.	-11.6	-22.2	41.	152.1	4.0
400.0	25147.	-17.7	-38.0	15.	79.5	4.7
350.0	28378.	-25.3	-43.4	16.	37.5	7.0
300.0	31984.	-33.6			27.8	7.9
250.0	36105.	-42.3			57.9	16.1
200.0	40951.	-50.3			52.8	28.0
175.0	43770.	-56.5			53.8	34.6
150.0	46926.	-63.7			74.3	34.8
125.0	50574.	-66.2			107.2	20.0
100.0	54978.	-69.3			121.9	17.4
80.0	59368.	-67.6			122.0	13.8
70.0	62025.	-63.1			110.2	15.5
60.0	65165.	-59.3			79.5	23.4
50.0	68935.	-57.9			95.4	25.5
40.0	73585.	-54.6				

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 5997.30 FEET MSL
4 JULY 89 1400 HRS MDT
ASCENSION NO. 85

SIGNIFICANT LEVEL DATA
186006085
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 5.

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
877.7	5997.3	38.0	7.8	16.0
850.0	8955.0	36.0	5.5	17.0
814.6	6210.0	30.7	3.7	18.0
750.4	8590.8	23.9	-1.1	19.0
700.0	10565.7	18.3	.4	30.0
663.6	12058.4	10.4	-2.5	51.0
573.4	16036.1	3.4	-7.1	46.0
549.6	17160.3	-.2	-8.6	53.0
519.4	18639.1	-4.0	-7.8	75.0
504.4	19398.4	-5.6	-9.1	76.0
500.0	19624.6	-5.8	-10.4	70.0
497.0	19779.9	-5.8	-11.9	62.0
468.0	21321.7	-8.0	-14.7	63.0
446.6	22507.5	-12.0	-24.0	36.0
444.5	22626.2	-11.9	-31.9	17.0
439.6	22885.3	-12.0	-32.6	16.0
432.4	23320.9	-12.1	-32.7	16.0
400.0	25261.4	-17.3	-37.0	16.0
352.6	28325.8	-25.0	-42.9	17.0
330.6	29854.0	-29.3	-46.0	18.0
300.0	32116.1	-34.0	-49.9	18.0
270.4	34486.9	-39.1		
250.0	36248.2	-41.7		
238.4	37301.6	-45.0		
228.2	38262.0	-46.1		
208.6	40220.7	-48.2		
200.0	41151.8	-49.7		
180.8	43282.0	-55.2		
150.0	47141.3	-63.1		
143.4	48048.5	-65.7		
135.8	49140.8	-65.3		
128.4	50263.2	-66.3		

STATION ALTITUDE 3997.30 FEET MSL
ASCENSION NO. 65

1400 HRS MDT

SIGNIFICANT LEVEL DATA
18600.0005
S N R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 5 (continued)

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
117.6	52021.7	-65.7		
100.0	55252.5	-68.2		
89.1	58705.0	-65.6		
76.6	60569.3	-67.8		
72.8	61589.8	-63.9		
66.6	63390.6	-62.0		

STATION ALTITUDE 3997.30 FEET MSL
4 JULY 89 1400 HRS MDT
ASCENSION NO. 85

UPPER AIR DATA
1660060085
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 6.

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3997.3	877.7	38.0	7.8	16.0	978.2	688.8	90.0	9.9	1.000260
4000.0	877.6	38.0	7.8	16.0	978.1	688.8	90.0	9.9	1.000260
4500.0	863.0	35.9	6.6	16.5	968.7	686.3	97.4	8.4	1.000255
5000.0	848.7	33.9	5.5	17.0	959.1	684.0	107.8	7.1	1.000250
5500.0	834.9	32.6	4.7	17.4	947.2	682.5	122.3	6.1	1.000246
6000.0	820.4	31.3	4.0	17.8	935.4	681.0	129.5	5.5	1.000242
6500.0	806.5	29.9	3.1	18.1	923.9	679.4	120.8	5.1	1.000237
7000.0	792.7	28.4	2.1	18.3	912.5	677.7	110.7	4.8	1.000233
7500.0	779.2	27.0	1.1	18.5	901.4	676.0	106.9	4.6	1.000229
8000.0	765.8	25.6	.1	18.8	890.4	674.4	111.4	4.4	1.000225
8500.0	752.8	24.2	-.9	19.0	879.5	672.7	116.9	4.2	1.000220
9000.0	739.7	22.7	-.5	21.3	868.2	671.1	126.4	3.8	1.000219
9500.0	726.8	21.3	-.0	24.1	857.0	669.6	137.8	3.6	1.000218
10000.0	714.1	19.9	.3	26.8	846.1	668.0	152.4	3.5	1.000216
10500.0	701.6	18.5	.4	29.6	835.3	666.4	161.1	3.6	1.000214
11000.0	689.2	17.2	-.4	30.3	824.3	664.9	163.2	3.9	1.000210
11500.0	677.0	15.9	-1.4	30.6	813.5	663.3	147.9	3.4	1.000206
12000.0	665.0	14.6	-2.4	31.0	802.9	661.8	124.1	3.2	1.000202
12500.0	652.9	13.2	-2.9	32.7	792.1	660.2	106.3	3.3	1.000199
13000.0	641.0	11.8	-3.3	34.6	781.5	658.6	92.7	3.6	1.000196
13500.0	629.4	10.4	-3.8	36.4	771.1	656.9	98.3	4.3	1.000193
14000.0	617.9	9.0	-4.4	38.3	760.8	655.3	103.5	5.1	1.000190
14500.0	606.7	7.6	-5.0	40.2	750.7	653.7	110.4	6.5	1.000188
15000.0	595.6	6.3	-5.6	42.1	740.7	652.0	114.4	7.5	1.000185
15500.0	584.8	4.9	-6.3	44.0	730.9	650.4	116.0	7.5	1.000182
16000.0	574.2	3.5	-7.0	45.9	721.3	648.7	117.6	7.4	1.000179
16500.0	563.5	1.9	-7.7	48.9	712.0	646.9	119.4	6.5	1.000176
17000.0	552.9	.3	-8.4	52.0	702.8	645.0	121.5	5.4	1.000173
17500.0	542.5	-1.1	-8.3	58.1	693.0	643.3	124.3	3.5	1.000171
18000.0	532.2	-2.4	-7.9	65.5	683.1	641.8	135.4	1.7	1.000170
18500.0	522.2	-3.6	-7.8	72.9	673.3	640.3	233.4	.9	1.000168
19000.0	512.2	-4.8	-8.4	75.5	663.3	639.0	255.8	2.0	1.000165

STATION ALTITUDE 3997.30 FEET MSL
4 JULY 80 1400 HRS MDT
ASCENSION NO. 85

UPPER AIR DATA
186006065
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 6 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
19500.0	502.4	-5.7	-9.7	73.3	653.0	637.8	235.5	2.7	1.000161
20000.0	492.8	-6.3	-12.3	62.1	642.0	637.0	216.1	3.4	1.000156
20500.0	483.2	-7.3	-13.2	62.5	632.1	635.8	199.6	4.3	1.000153
21000.0	473.9	-8.3	-14.1	62.8	622.4	634.5	196.2	4.8	1.000150
21500.0	464.7	-9.5	-16.0	58.9	613.0	633.1	196.3	4.9	1.000146
22000.0	455.6	-10.7	-19.7	47.6	604.2	631.4	178.4	3.3	1.000142
22500.0	446.7	-12.0	-23.9	36.2	595.4	629.8	123.9	2.5	1.000138
23000.0	437.9	-12.8	-32.6	16.0	584.1	629.6	85.5	4.2	1.000132
23500.0	429.3	-12.6	-33.1	16.0	573.8	629.0	72.8	6.6	1.000130
24000.0	420.8	-13.9	-34.2	16.0	565.3	627.3	72.5	7.2	1.000128
24500.0	412.4	-15.3	-35.3	16.0	556.9	625.7	77.5	6.5	1.000126
25000.0	404.2	-16.6	-36.4	16.0	548.7	624.1	83.2	5.9	1.000124
25500.0	396.1	-17.9	-37.5	16.1	540.5	622.5	89.9	5.2	1.000122
26000.0	388.0	-19.2	-38.4	16.2	532.1	620.9	94.3	4.8	1.000120
26500.0	380.1	-20.4	-39.4	16.4	523.8	619.4	92.9	4.4	1.000118
27000.0	372.4	-21.7	-40.3	16.6	515.7	617.9	92.4	4.1	1.000116
27500.0	364.8	-22.9	-41.3	16.7	507.8	616.3	93.6	3.8	1.000114
28000.0	357.4	-24.2	-42.2	16.9	500.0	614.8	78.0	3.7	1.000112
28500.0	350.0	-25.5	-43.2	17.1	492.3	613.1	52.0	4.6	1.000110
29000.0	342.7	-26.9	-44.2	17.4	484.8	611.4	35.8	5.9	1.000109
29500.0	335.6	-28.3	-45.2	17.8	477.4	609.6	24.7	7.2	1.000107
30000.0	328.5	-29.6	-46.2	18.0	469.9	608.0	19.9	8.1	1.000105
30500.0	321.6	-30.6	-47.1	18.0	461.9	606.7	21.2	8.1	1.000103
31000.0	314.7	-31.7	-48.0	18.0	454.0	605.4	22.3	8.2	1.000102
31500.0	308.0	-32.7	-48.9	18.0	446.3	604.1	22.8	8.9	1.000100
32000.0	301.5	-33.8	-49.7	18.0	438.7	602.8	21.7	9.6	1.000098
32500.0	295.0	-34.8	-52.1	15.1**	431.2	601.4	16.3	10.3	1.000096
33000.0	288.6	-35.9	-55.4	11.3**	423.8	600.1	14.6	10.9	1.000095
33500.0	282.3	-37.0	-59.5	7.5**	416.5	598.7	22.5	11.0	1.000093
34000.0	276.2	-38.1	-65.6	3.7**	409.3	597.3	30.3	11.3	1.000091
34500.0	270.2	-39.1			402.3	596.0	38.7	12.0	1.000090
35000.0	264.3	-39.9			394.7	595.0	46.0	12.8	1.000088

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3997.30 FEET MSL
4 JULY 89 1400 HRS MDT
ASCENSION NO. 65

UPPER AIR DATA
1860060085
S M R

GEODETIC COORDINATES
32.46034 LAT DEG
106.42307 LON DEG

TABLE 6 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
35500.0	256.5	-40.6			387.2	594.1	52.1	13.4	1.000066
36000.0	252.8	-41.3			379.9	593.2	57.7	14.1	1.000065
36500.0	247.2	-42.5			373.3	591.7	63.5	15.3	1.000063
37000.0	241.7	-44.1			367.5	589.7	68.3	16.5	1.000062
37500.0	236.3	-45.2			361.1	588.2	62.7	17.5	1.000060
38000.0	230.9	-45.8			353.9	587.4	57.6	18.7	1.000079
38500.0	225.7	-46.4			346.7	586.7	52.6	20.7	1.000077
39000.0	220.6	-46.9			339.7	586.0	48.4	22.9	1.000076
39500.0	215.6	-47.4			332.8	585.3	46.9	24.9	1.000074
40000.0	210.7	-48.0			326.0	584.6	47.6	26.3	1.000073
40500.0	205.9	-48.7			319.6	583.7	48.3	27.7	1.000071
41000.0	201.2	-49.5			313.4	582.6	49.0	29.1	1.000070
41500.0	196.6	-50.6			307.8	581.1	49.7	30.5	1.000069
42000.0	192.0	-51.9			302.4	579.5	49.9	31.5	1.000067
42500.0	187.6	-53.2			297.1	577.8	49.9	32.2	1.000066
43000.0	183.2	-54.5			291.9	576.1	49.9	32.8	1.000065
43500.0	178.9	-55.6			286.5	574.6	51.3	32.8	1.000064
44000.0	174.6	-56.7			281.0	573.2	53.0	32.7	1.000063
44500.0	170.5	-57.7			275.6	571.8	55.0	32.7	1.000061
45000.0	166.4	-58.7			270.3	570.5	58.4	33.1	1.000060
45500.0	162.4	-59.7			265.1	569.1	61.7	33.6	1.000059
46000.0	158.5	-60.8			260.0	567.8	65.3	33.8	1.000058
46500.0	154.7	-61.8			255.0	566.4	69.5	33.5	1.000057
47000.0	151.0	-62.8			250.1	565.0	73.7	33.5	1.000056
47500.0	147.4	-64.1			245.6	563.2	76.4	32.4	1.000055
48000.0	143.7	-65.6			241.2	561.3	79.0	31.0	1.000054
48500.0	140.2	-65.5			235.3	561.3	81.7	29.1	1.000052
49000.0	136.8	-65.4			229.3	561.6	84.8	26.1	1.000051
49500.0	133.4	-65.6			223.9	561.2	88.7	23.2	1.000050
50000.0	130.1	-66.1			218.9	560.6	92.3	21.7	1.000049
50500.0	126.9	-66.2			213.6	560.4	97.3	20.4	1.000048
51000.0	123.8	-66.0			208.2	560.6	100.6	19.5	1.000046

STATION ALTITUDE 5997.30 FEET MSL
4 JULY 80
ASCENSION NO. 65 1400 HRS MDT

UPPER AIR DATA
1860060085
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 6 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
51500.0	120.7	-65.9			202.9	560.9	102.1	19.1	1.000045
52000.0	117.7	-65.7			197.7	561.1	103.5	18.6	1.000044
52500.0	114.8	-66.1			193.1	560.6	106.5	18.4	1.000043
53000.0	112.0	-66.5			188.7	560.1	110.1	18.3	1.000042
53500.0	109.2	-66.8			184.4	559.6	113.7	18.3	1.000041
54000.0	106.5	-67.2			180.1	559.0	117.5	18.4	1.000040
54500.0	103.8	-67.6			176.0	558.5	121.3	18.6	1.000039
55000.0	101.3	-68.0			172.0	558.0	125.3	18.5	1.000038
55500.0	98.8	-68.0			167.7	558.0	130.8	17.7	1.000037
56000.0	96.3	-67.6			163.3	558.5	136.7	17.0	1.000036
56500.0	93.9	-67.3			158.9	559.0	139.6	16.5	1.000035
57000.0	91.6	-66.9			154.7	559.5	138.7	15.8	1.000034
57500.0	89.3	-66.5			150.6	560.0	137.7	15.1	1.000034
58000.0	87.1	-66.1			146.6	560.5	133.8	14.7	1.000033
58500.0	85.0	-65.8			142.7	561.0	128.6	14.6	1.000032
59000.0	82.9	-65.9			139.3	560.8	123.3	14.5	1.000031
59500.0	80.8	-66.5			136.3	560.0	125.8	15.0	1.000030
60000.0	78.8	-67.1			133.3	559.2	128.6	15.6	1.000030
60500.0	76.9	-67.7			130.3	558.4			1.000029
61000.0	75.0	-66.2			126.2	560.5			1.000028
61500.0	73.1	-64.2			121.9	563.1			1.000027
62000.0	71.3	-63.5			118.5	564.1			1.000026
62500.0	69.6	-62.9			115.4	564.8			1.000026
63000.0	67.9	-62.4			112.3	565.5			1.000025

STATION ALTITUDE 3997.30 FEET MSL
4 JULY 80 1400 HRS MDT
ASCENSION NO. 85

MANDATORY LEVELS
1660060085
5 M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 7.

PRESSURE	GEOPOTENTIAL	TEMPERATURE		REL.HUM.	WIND DATA	
		AIR	DEWPOINT	PERCENT	DIRECTION	SPEED
MILLIBARS	FEET	DEGREES CENTIGRADE			DEGREES(TN)	KNOTS
850.0	4951.	34.0	5.5	17.	106.7	7.2
800.0	6734.	29.2	2.6	18.	116.2	4.9
750.0	8508.	23.0	-1.1	19.	118.6	4.1
700.0	10355.	18.3	.4	30.	161.4	3.7
650.0	12618.	12.8	-3.0	33.	102.0	3.3
600.0	14800.	6.8	-5.4	41.	113.4	7.3
550.0	17119.	-.1	-8.6	53.	122.0	4.9
500.0	19587.	-5.8	-10.4	70.	232.3	2.8
450.0	22282.	-11.5	-22.3	40.	148.7	2.5
400.0	25218.	-17.3	-37.0	16.	86.4	5.5
350.0	28458.	-25.5	-43.2	17.	52.5	4.6
300.0	32051.	-34.0	-49.9	18.	20.5	9.8
250.0	36166.	-41.7			60.5	14.6
200.0	41031.	-49.7			49.2	29.4
175.0	43852.	-56.6			52.8	32.7
150.0	47012.	-63.1			74.6	33.5
125.0	50651.	-66.1			100.0	19.8
100.0	55079.	-68.2			127.7	18.1
80.0	59505.	-66.8			126.8	15.2
70.0	62169.	-63.1				

STATION ALTITUDE 4126.59 FEET MSL
4 JULY 89 1500 HRS MDT
ASCENSION NO. 226

SIGNIFICANT LEVEL DATA
1860010226
HOLLOMAN

GEODETIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

TABLE 8.

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	REL.HUM. PERCENT
874.2	4126.6	36.0	8.0	18.0
863.8	4483.6	38.8	11.2	24.0
850.0	4962.9	38.1	10.7	24.0
763.8	8092.5	24.9	6.1	30.0
700.0	10572.3	17.1	2.7	38.0
654.0	13314.7	9.8	.2	51.0
557.0	16787.3	-1.1	-1.2	99.0
516.6	18756.5	-4.0	-4.1	99.0
500.0	19600.5	-7.3	-7.4	99.0
490.8	20077.6	-7.1	-7.2	99.0
483.1	20481.2	-10.5	-10.6	99.0
478.0	20751.9	-7.5	-7.6	99.0
433.4	23252.1	-10.3	-10.4	99.0
426.2	23672.8	-15.7	-19.7	71.0
419.0	24093.4	-18.6	-28.3	42.0
412.0	24505.8	-20.0	-34.1	27.0
400.0	25225.2	-21.3	-37.7	21.0
338.8	29194.0	-29.2	-43.3	24.0
314.0	30977.3	-30.6	-36.5	56.0
300.0	32038.9	-33.1	-39.9	50.0
260.8	35231.0	-40.6	-48.3	43.0
250.0	36176.0	-42.5		
239.4	37134.9	-45.0		
209.4	40066.5	-47.5		
200.0	41059.3	-50.9		
160.2	45711.1	-61.1		
150.0	47050.1	-63.7		
122.0	51185.4	-68.2		
104.6	54799.6	-69.3		
100.0	55112.5	-69.0		
79.6	59641.9	-66.6		
73.4	61255.3	-68.2		

STATION ALTITUDE 4126.59 FEET MSL
4 JULY 80 1500 HRS MDT
ASCENSION NO. 226

SIGNIFICANT LEVEL DATA
1860910226
HOLLOMAN

GEODETIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

TABLE 8 (continued)

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
70.0	62200.6	-65.9		
61.8	64730.3	-60.6		
50.0	69110.5	-58.4		
44.8	71007.5	-55.7		
36.4	75700.2	-55.2		
30.0	79896.5	-52.0		
21.4	87175.9	-49.6		
20.0	88691.7	-49.8		
19.0	89752.1	-50.0		

STATION ALTITUDE 4126.59 FEET MSL
4 JULY 89 1500 HRS MDT
ASCENSION NO. [illegible]

UPPER AIR DATA
1860019226
HOLLOMAN

GEODETIC COORDINATES
32.86865 LAT DEG
106.09965 LON DEG

TABLE 9.

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	DEWPOINT	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
4126.6	874.2	36.0	9.0	18.0	980.5	686.6	.0	.0	1.000261
4500.0	863.3	34.8	11.2	24.0	971.0	685.6	108.6	.8	1.000270
5000.0	848.9	34.0	10.0	24.1	957.4	684.7	108.6	1.8	1.000265
5500.0	834.5	32.5	10.0	25.0	945.8	683.0	108.6	2.8	1.000261
6000.0	820.4	31.1	9.3	26.0	934.4	681.3	108.6	3.9	1.000256
6500.0	806.5	29.6	8.6	26.9	923.2	679.6	108.6	4.9	1.000252
7000.0	792.9	28.1	7.8	27.9	912.2	677.9	108.6	5.9	1.000248
7500.0	779.4	26.6	7.1	28.9	901.3	676.2	116.6	6.2	1.000243
8000.0	766.2	25.2	6.3	29.8	890.5	674.5	125.5	6.5	1.000239
8500.0	752.9	23.6	5.7	31.3	879.8	672.7	133.4	6.9	1.000235
9000.0	739.8	22.0	5.0	32.9	869.2	670.8	140.3	7.5	1.000232
9500.0	726.9	20.5	4.3	34.5	858.7	669.0	145.3	7.6	1.000228
10000.0	714.2	18.9	3.5	36.2	848.4	667.2	149.9	7.6	1.000224
10500.0	701.8	17.3	2.8	37.8	838.2	665.3	154.5	7.6	1.000220
11000.0	689.5	16.0	2.4	40.0	827.2	663.7	159.0	7.7	1.000217
11500.0	677.4	14.6	2.0	42.4	816.2	662.2	162.3	7.3	1.000214
12000.0	665.5	13.3	1.6	44.8	805.4	660.6	165.4	6.7	1.000211
12500.0	653.9	12.0	1.1	47.1	794.7	659.1	169.1	6.0	1.000208
13000.0	642.2	10.6	.5	49.5	784.2	657.5	173.7	5.4	1.000205
13500.0	629.5	9.2	.3	53.6	773.9	655.9	181.0	4.9	1.000202
14000.0	617.0	7.6	.5	60.5	763.7	654.1	191.4	4.7	1.000201
14500.0	604.6	6.1	.5	67.4	753.8	652.3	202.6	4.6	1.000199
15000.0	592.4	4.5	.5	74.3	744.0	650.5	213.6	4.7	1.000197
15500.0	580.4	2.9	.0	81.2	734.4	648.6	223.4	4.9	1.000194
16000.0	568.6	1.4	-.4	89.1	725.0	646.7	229.6	5.1	1.000191
16500.0	557.0	-.2	-.9	95.0	715.8	644.9	235.4	5.3	1.000189
17000.0	545.5	-1.4	-1.5	99.0	705.6	643.4	240.6	5.6	1.000185
17500.0	534.2	-2.1	-2.3	99.0	694.2	642.5	242.3	5.0	1.000181
18000.0	523.3	-2.9	-3.0	99.0	683.0	641.6	241.0	3.7	1.000178
18500.0	512.7	-3.6	-3.8	99.0	672.0	640.7	238.4	2.4	1.000174
19000.0	502.3	-5.0	-5.1	99.0	662.7	639.0	215.1	.9	1.000170
19500.0	491.9	-6.9	-7.0	99.0	655.0	636.5	92.4	1.6	1.000165

STATION ALTITUDE 9126.59 FEET MSL
4 JULY 87 1500 HRS MDT
ASCENSION NO. 2[illegible]

UPPER AIR DATA
1860010226
HOLLOMAN

GEODETIC COORDINATES
32.86865 LAT DEG
106.09965 LON DEG

TABLE 9 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
20000.0	492.3	-7.1	-7.3	99.0	692.9	636.3	81.4	3.8	1.000162
20500.0	482.7	-10.3	-10.4	99.0	658.4	632.3	79.5	3.7	1.000157
21000.0	473.3	-7.8	-7.9	99.0	619.7	635.5	77.4	3.6	1.000156
21500.0	464.2	-8.3	-8.5	99.0	609.1	634.8	75.6	3.1	1.000153
22000.0	455.2	-8.9	-9.0	99.0	598.5	634.1	68.5	2.5	1.000150
22500.0	446.4	-9.5	-9.6	99.0	588.2	633.4	69.6	3.1	1.000147
23000.0	437.7	-10.0	-10.1	99.0	578.1	632.7	70.4	3.7	1.000144
23500.0	429.1	-13.5	-15.8	82.5	574.8	628.3	71.2	3.4	1.000138
24000.0	420.6	-18.0	-26.1	68.4	573.8	622.5	73.7	2.0	1.000132
24500.0	412.1	-20.0	-34.0	27.2	566.9	620.0	118.6	.4	1.000128
25000.0	403.7	-20.9	-36.5	22.9	557.4	618.8	226.8	2.4	1.000126
25500.0	395.4	-21.8	-38.1	21.2	548.0	617.6	235.2	4.3	1.000123
26000.0	387.2	-22.8	-38.8	21.6	538.8	616.4	249.4	4.8	1.000121
26500.0	379.2	-23.8	-39.5	22.0	529.8	615.2	265.0	5.4	1.000119
27000.0	371.4	-24.8	-40.2	22.3	520.9	614.0	280.6	6.0	1.000117
27500.0	363.7	-25.8	-40.9	22.7	512.2	612.7	293.7	6.7	1.000115
28000.0	356.2	-26.8	-41.6	23.1	503.6	611.5	302.9	6.9	1.000113
28500.0	348.8	-27.8	-42.3	23.5	495.2	610.2	312.7	7.1	1.000111
29000.0	341.6	-28.8	-43.0	23.9	486.9	609.0	327.9	7.2	1.000109
29500.0	334.4	-29.4	-41.6	20.5	477.9	608.2	342.1	7.7	1.000107
30000.0	327.4	-29.8	-39.4	38.5	468.6	607.8	358.0	8.6	1.000106
30500.0	320.5	-30.2	-37.7	47.4	459.4	607.3	10.3	9.9	1.000104
31000.0	313.7	-30.7	-36.5	55.9	450.5	606.8	20.6	10.8	1.000102
31500.0	307.0	-31.8	-39.2	53.0	443.1	605.3	29.6	11.8	1.000100
32000.0	300.5	-33.0	-39.8	50.2	435.8	603.8	41.1	13.7	1.000098
32500.0	294.0	-34.2	-41.1	49.0	428.5	602.3	51.2	16.3	1.000097
33000.0	287.6	-35.4	-42.4	47.9	421.3	600.8	57.2	17.3	1.000095
33500.0	281.4	-36.5	-43.7	46.8	414.2	599.3	62.0	17.0	1.000093
34000.0	275.3	-37.7	-45.0	45.7	407.2	597.8	65.4	15.8	1.000091
34500.0	269.3	-38.9	-46.3	44.6	400.4	596.3	68.7	14.2	1.000090
35000.0	263.5	-40.1	-47.7	43.5	393.7	594.8	71.0	15.3	1.000088
35500.0	257.7	-41.1	-51.6	30.8**	386.9	593.4	72.7	16.9	1.000087

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4126.59 FEET MSL
4 JULY 80 1500 HRS MDT
ASCENSION NO. 226

UPPER AIR DATA
1860010226
HOLLOMAN

GEODETIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

TABLE 9 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
36000.0	252.0	-42.1	-63.1	8.0**	380.0	592.1	71.6	17.9	1.000065
36500.0	248.4	-43.3			373.5	590.6	69.5	18.6	1.000063
37000.0	244.9	-44.6			367.2	588.9	67.0	19.3	1.000062
37500.0	241.4	-45.3			360.0	588.0	63.8	19.9	1.000060
38000.0	238.1	-45.7			352.5	587.5	60.9	20.5	1.000079
38500.0	234.9	-46.2			345.2	586.9	58.2	21.4	1.000077
39000.0	231.9	-46.6			338.1	586.4	55.8	22.3	1.000075
39500.0	228.9	-47.0			331.0	585.8	53.7	23.1	1.000074
40000.0	226.0	-47.4			324.2	585.3	51.7	23.9	1.000072
40500.0	223.2	-49.0			319.0	583.3	50.5	24.5	1.000071
41000.0	220.5	-50.7			314.1	581.1	49.6	25.0	1.000070
41500.0	217.8	-51.9			308.3	579.5	48.5	25.5	1.000069
42000.0	215.2	-53.0			302.5	578.1	47.3	26.0	1.000067
42500.0	212.7	-54.1			296.9	576.6	46.0	26.6	1.000066
43000.0	210.3	-55.2			291.3	575.2	48.4	27.2	1.000065
43500.0	207.9	-56.3			285.9	573.8	50.9	27.9	1.000064
44000.0	205.8	-57.3			280.6	572.3	54.8	28.2	1.000062
44500.0	203.7	-58.4			275.4	570.8	59.6	28.5	1.000061
45000.0	201.7	-59.5			270.3	569.4	64.3	28.6	1.000060
45500.0	199.8	-60.6			265.3	567.9	69.1	28.3	1.000059
46000.0	197.9	-61.7			260.2	566.6	73.3	28.5	1.000058
46500.0	196.1	-62.6			255.0	565.3	75.5	29.4	1.000057
47000.0	194.4	-63.6			250.0	563.9	77.4	29.7	1.000056
47500.0	192.7	-64.2			244.5	563.2	79.0	28.3	1.000054
48000.0	191.0	-64.7			239.1	562.4	80.7	26.8	1.000053
48500.0	189.5	-65.3			233.8	561.7	83.0	24.9	1.000052
49000.0	188.1	-65.8			228.6	561.0	85.7	23.0	1.000051
49500.0	186.7	-66.4			223.6	560.2	88.6	21.5	1.000050
50000.0	185.4	-66.9			218.6	559.5	91.5	20.4	1.000049
50500.0	184.3	-67.5			213.8	558.7	94.7	19.4	1.000048
51000.0	183.1	-68.0			209.1	558.0	98.5	18.6	1.000047
51500.0	182.1	-68.3			204.2	557.6	102.5	18.0	1.000045

** [illegible] ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4126.59 FEET MSL
4 JULY 80 1500 HRS MDT
ASCENSION NO. 226

UPPER AIR DATA
1860N10226
HOLLOMAN

GEODETIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

TABLE 9 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
520000.0	117.1	-68.4			199.2	557.4	105.4	17.7	1.000044
525000.0	114.1	-68.6			194.4	557.2	106.0	17.9	1.000043
530000.0	111.3	-68.8			189.7	557.0	106.6	18.1	1.000042
535000.0	108.5	-68.9			185.1	556.8	107.3	17.9	1.000041
540000.0	105.8	-69.1			180.6	556.6	108.1	17.7	1.000040
545000.0	103.2	-69.2			176.2	556.4	109.1	17.3	1.000039
550000.0	100.6	-69.1			171.7	556.5	113.6	16.1	1.000038
555000.0	98.1	-68.8			167.2	556.9	118.9	15.0	1.000037
560000.0	95.6	-68.5			162.8	557.3	125.1	13.9	1.000036
565000.0	93.2	-68.3			158.6	557.6	132.5	12.8	1.000035
570000.0	90.9	-68.0			154.4	558.0	141.2	12.0	1.000034
575000.0	88.7	-67.7			150.4	558.4	147.0	11.6	1.000033
580000.0	86.5	-67.5			146.4	558.7	151.0	11.5	1.000033
585000.0	84.3	-67.2			142.6	559.1	154.2	11.6	1.000032
590000.0	82.2	-66.9			138.9	559.4	146.3	13.9	1.000031
595000.0	80.2	-66.7			135.3	559.8	140.7	16.5	1.000030
600000.0	78.2	-67.0			132.1	559.4	137.5	18.5	1.000029
605000.0	76.2	-67.5			129.1	558.7	135.9	19.7	1.000029
610000.0	74.3	-67.9			126.2	558.1	134.4	20.9	1.000028
615000.0	72.5	-67.6			122.9	558.5	132.5	19.2	1.000027
620000.0	70.7	-66.4			119.1	560.2	129.9	16.4	1.000027
625000.0	69.0	-65.3			115.6	561.7	126.1	13.7	1.000026
630000.0	67.3	-64.2			112.2	563.1	117.4	12.9	1.000025
635000.0	65.7	-63.2			108.9	564.5	107.9	12.6	1.000024
640000.0	64.1	-62.1			105.8	565.9	97.6	12.9	1.000024
645000.0	62.5	-61.1			102.7	567.3	85.7	14.6	1.000023
650000.0	61.0	-60.5			99.9	568.2	76.6	16.8	1.000022
655000.0	59.5	-60.2			97.4	568.5	70.6	19.3	1.000022
660000.0	58.1	-60.0			95.0	568.8	70.7	22.0	1.000021
665000.0	56.7	-59.7			92.6	569.2	70.7	24.7	1.000021
670000.0	55.4	-59.5			90.3	569.5	71.2	27.2	1.000020
675000.0	54.1	-59.2			88.0	569.8	77.5	26.9	1.000020

STATION ALTITUDE 4126.59 FEET MSL
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UPPER AIR DATA
1860010226
HOLLOMAN

GEODETIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

TABLE 9 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
68000.0	52.8	-59.0			85.8	570.2	84.0	26.9	1.000019
68500.0	51.5	-58.7			83.7	570.5	90.2	27.3	1.000019
69000.0	50.3	-58.5			81.6	570.8	91.9	27.1	1.000018
69500.0	49.1	-57.9			79.4	571.5	93.6	26.9	1.000018
70000.0	47.9	-57.4			77.4	572.3	95.3	26.8	1.000017
70500.0	46.8	-56.8			75.3	573.1	97.4	26.2	1.000017
71000.0	45.7	-56.2			73.3	573.8	99.7	25.5	1.000016
71500.0	44.6	-55.7			71.5	574.5	102.2	24.9	1.000016
72000.0	43.6	-55.6			69.8	574.6	104.5	24.2	1.000016
72500.0	42.5	-55.6			68.1	574.6	106.3	23.4	1.000015
73000.0	41.5	-55.5			66.5	574.7	108.2	22.6	1.000015
73500.0	40.6	-55.5			64.9	574.8	110.2	21.8	1.000014
74000.0	39.6	-55.4			63.4	574.9	106.4	21.5	1.000014
74500.0	38.7	-55.3			61.9	574.9	101.8	21.4	1.000014
75000.0	37.8	-55.3			60.4	575.0	97.2	21.5	1.000013
75500.0	36.9	-55.2			59.0	575.1	93.2	22.0	1.000013
76000.0	36.0	-55.0			57.5	575.4	90.1	23.0	1.000013
76500.0	35.2	-54.6			56.1	575.9	87.2	24.1	1.000012
77000.0	34.4	-54.3			54.7	576.4	84.6	25.2	1.000012
77500.0	33.6	-53.9			53.3	576.9	84.5	26.1	1.000012
78000.0	32.8	-53.5			52.0	577.4	84.5	27.1	1.000012
78500.0	32.0	-53.1			50.7	577.9	84.5	28.0	1.000011
79000.0	31.3	-52.7			49.4	578.4	84.5	28.7	1.000011
79500.0	30.6	-52.3			48.2	578.9	84.5	29.2	1.000011
80000.0	29.9	-52.0			47.0	579.4	84.4	29.7	1.000010
80500.0	29.2	-51.8			45.9	579.6	84.4	30.2	1.000010
81000.0	28.5	-51.6			44.8	579.8	86.1	30.2	1.000010
81500.0	27.8	-51.5			43.8	580.0	87.9	30.2	1.000010
82000.0	27.2	-51.3			42.7	580.3	89.8	30.2	1.000010
82500.0	26.6	-51.1			41.7	580.5	91.7	30.4	1.000009
83000.0	26.0	-51.0			40.7	580.7	94.0	30.7	1.000009
83500.0	25.4	-50.8			39.8	580.9	96.2	31.1	1.000009

STATION ALTITUDE 9126.59 FEET MSL
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UPPER AIR DATA
1860010226
HOLLOMAN

GEODETIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

TABLE 9 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
84000.0	24.8	-50.6			38.8	581.1	98.3	31.5	1.000009
84500.0	24.2	-50.5			37.9	581.3	98.5	31.1	1.000008
85000.0	23.7	-50.3			37.0	581.5	97.9	30.5	1.000008
85500.0	23.1	-50.2			36.1	581.8	97.4	29.9	1.000008
86000.0	22.6	-50.0			35.3	582.0			1.000008
86500.0	22.1	-49.8			34.4	582.2			1.000008
87000.0	21.6	-49.7			33.6	582.4			1.000007
87500.0	21.1	-49.6			32.9	582.4			1.000007
88000.0	20.6	-49.7			32.1	582.3			1.000007
88500.0	20.1	-49.8			31.4	582.2			1.000007
89000.0	19.7	-49.9			30.7	582.1			1.000007
89500.0	19.2	-50.0			30.0	582.0			1.000007

STATION ALTITUDE 4126.59 FEET MSL
4 JULY 80 1500 HRS MDT
ASCENSION NO. 226

MANDATORY LEVELS
1460010226
HOLLOMAN

GEODETIC COORDINATES
32.88865 LAT DEG
106.09965 LON DEG

TABLE 10.

PRESSURE	GEOPOTENTIAL	TEMPERATURE		REL.HUM.	WIND DATA	
		AIR	DEWPOINT		DIRECTION	SPEED
MILLIBARS	FEET	DEGREES CENTIGRADE		PERCENT	DEGREES(TN)	KNOTS
850.0	4959.	34.1	10.7	24.	108.6	1.7
800.0	6744.	28.9	8.2	27.	108.6	5.4
750.0	8609.	23.3	5.5	32.	135.1	7.1
700.0	10562.	17.1	2.7	38.	155.1	7.6
650.0	12618.	11.6	.9	48.	170.2	5.9
600.0	14792.	5.2	.4	71.	209.5	4.6
550.0	17098.	-1.6	-1.7	99.	241.7	5.7
500.0	19573.	-7.3	-7.4	99.	88.6	2.0
450.0	22262.	-9.2	-9.4	99.	69.2	2.9
400.0	25183.	-21.3	-37.7	21.	229.7	3.5
350.0	28375.	-27.7	-42.1	23.	310.1	7.1
300.0	31975.	-33.1	-39.9	50.	41.6	13.8
250.0	36097.	-42.5			71.0	18.2
200.0	40960.	-50.9			49.5	25.0
175.0	43772.	-57.0			53.5	28.2
150.0	46923.	-63.7			77.5	29.7
125.0	50558.	-67.7			96.0	19.1
100.0	54982.	-69.0			114.5	15.9
80.0	59345.	-66.7			140.6	16.6
70.0	61997.	-65.9			128.8	15.4
60.0	65105.	-60.3			72.2	18.3
50.0	68851.	-58.4			92.1	27.1
40.0	73501.	-55.4			108.5	21.6
30.0	79555.	-52.0			84.4	29.5
25.0	83441.	-50.7			97.4	31.3
20.0	88226.	-49.8				

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.